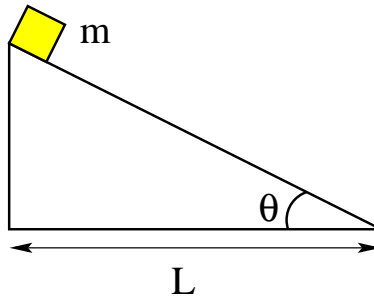


[mex154] Minimizing time of slide when friction is present

A block of mass m slides from rest down a ramp with base of fixed length L as shown. The motion is impeded by a frictional force $f = \mu N$, where N is the normal force and μ is the coefficient of kinetic friction. Find the angle θ for which the block arrives at the bottom of the ramp in the shortest time.



Solution: